

# Financing Renewable Energy Projects

U.S. DEPARTMENT OF  
**ENERGY**

Energy Efficiency &  
Renewable Energy



**GreenGov Symposium**

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**FEMP**  
Federal Energy Management Program



***Facilitates the Federal Government's  
implementation of sound, cost-effective  
energy management & investment  
practices to enhance the nation's  
energy security & environmental  
stewardship***

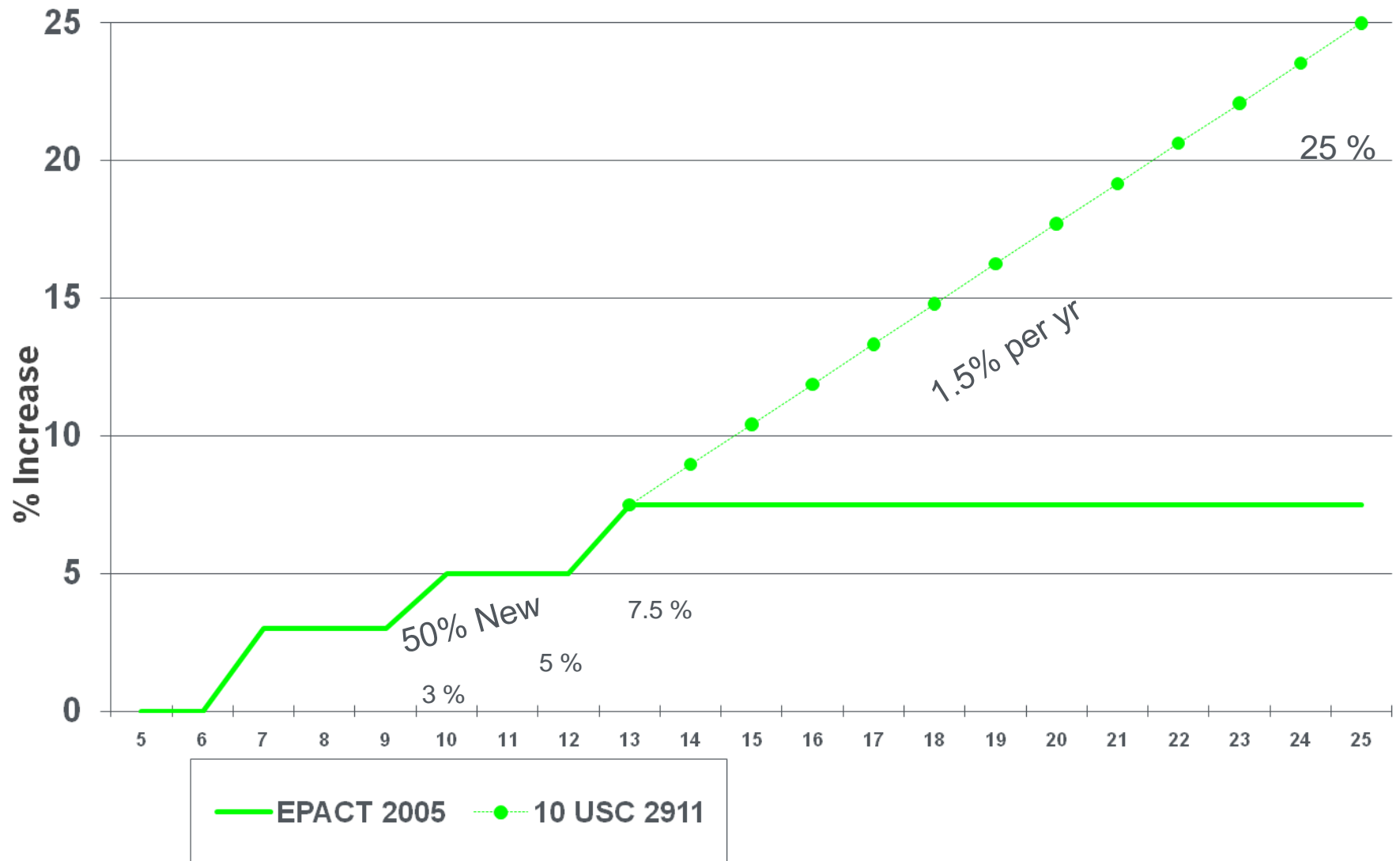
- Drivers to Develop Renewable Energy
- Available Financing Mechanisms
- ESPC Program
- Questions

- Federal renewable energy *use* goals:
  - 3% of electric energy by FY2007
  - 5% of electric energy by FY2010
  - 7.5% of electric energy by FY2013 and beyond
  - Double credit if *produced* on federal or Indian land *and used* by federal agency
- Renewable energy is *electric energy* from:
  - Solar
  - Wind
  - Biomass
  - Ocean
  - Geothermal
  - MSW
  - “New” Hydroelectric Generation

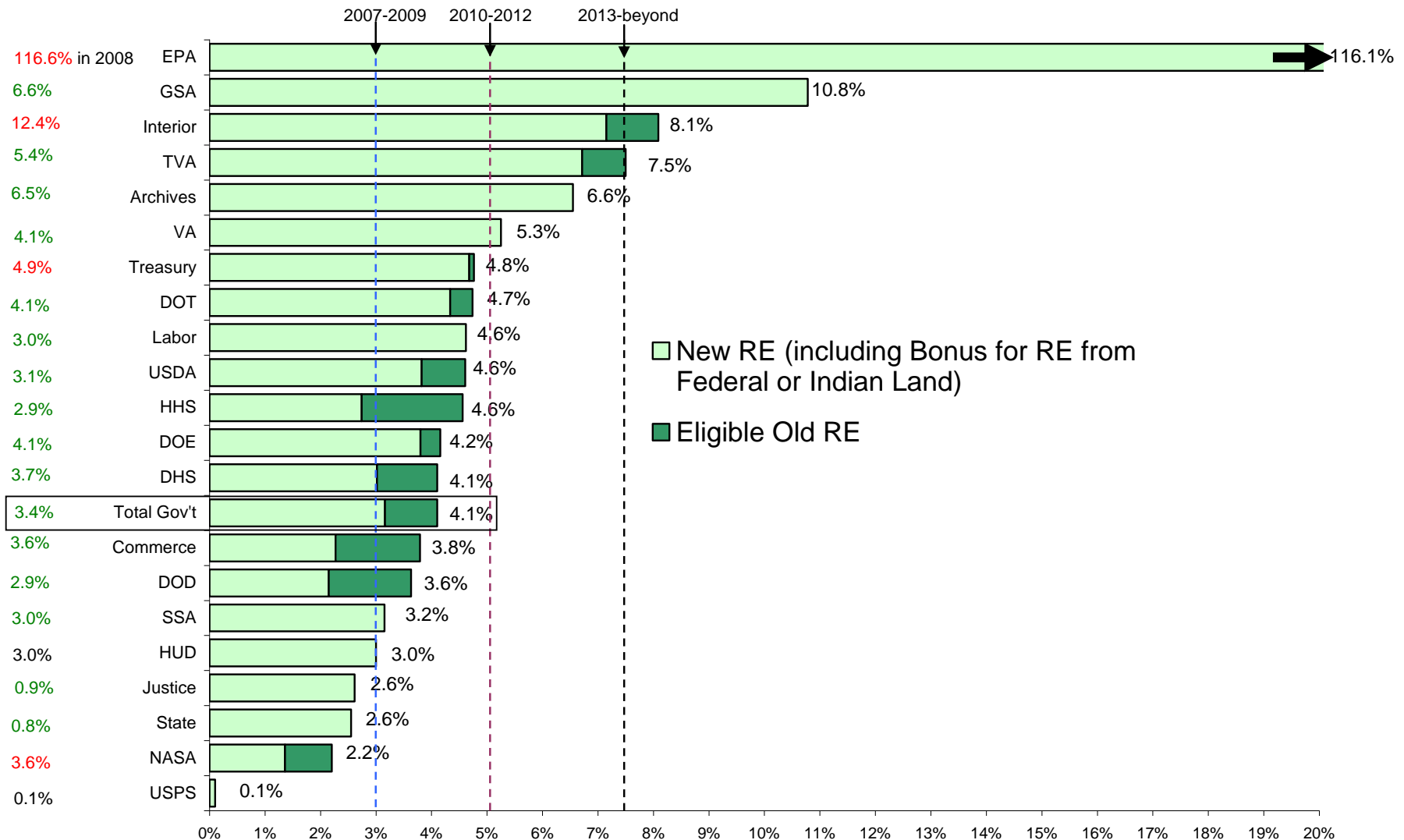
- National Defense Authorization Act 07-08 (10 USC 2911)
  - At least 25% of the energy consumed at DoD facilities should come from renewable resources by 2025
  - DOD installations should produce or procure electric energy from RE sources when it is consistent with the energy performance plans and goals of the Department
- Energy Independence and Security Act of 2007
  - Section 523: Requires 30% of hot water to be met with solar energy in new/renovated buildings

- DOE Guidance
- Agency Individual Renewable Energy Goals
- Strategic Sustainability Performance Plan
- Important tool to achieve GHG reductions
- 100% Reduction of Fossil Fuel use in New/Renovated Federal Buildings by 2030 (EISA '07 provision)

# DOD Renewable Power Goal



# Where we are now



FY 2009 Renewable Electric Energy as a % of Electricity Use

PRELIMINARY DATA

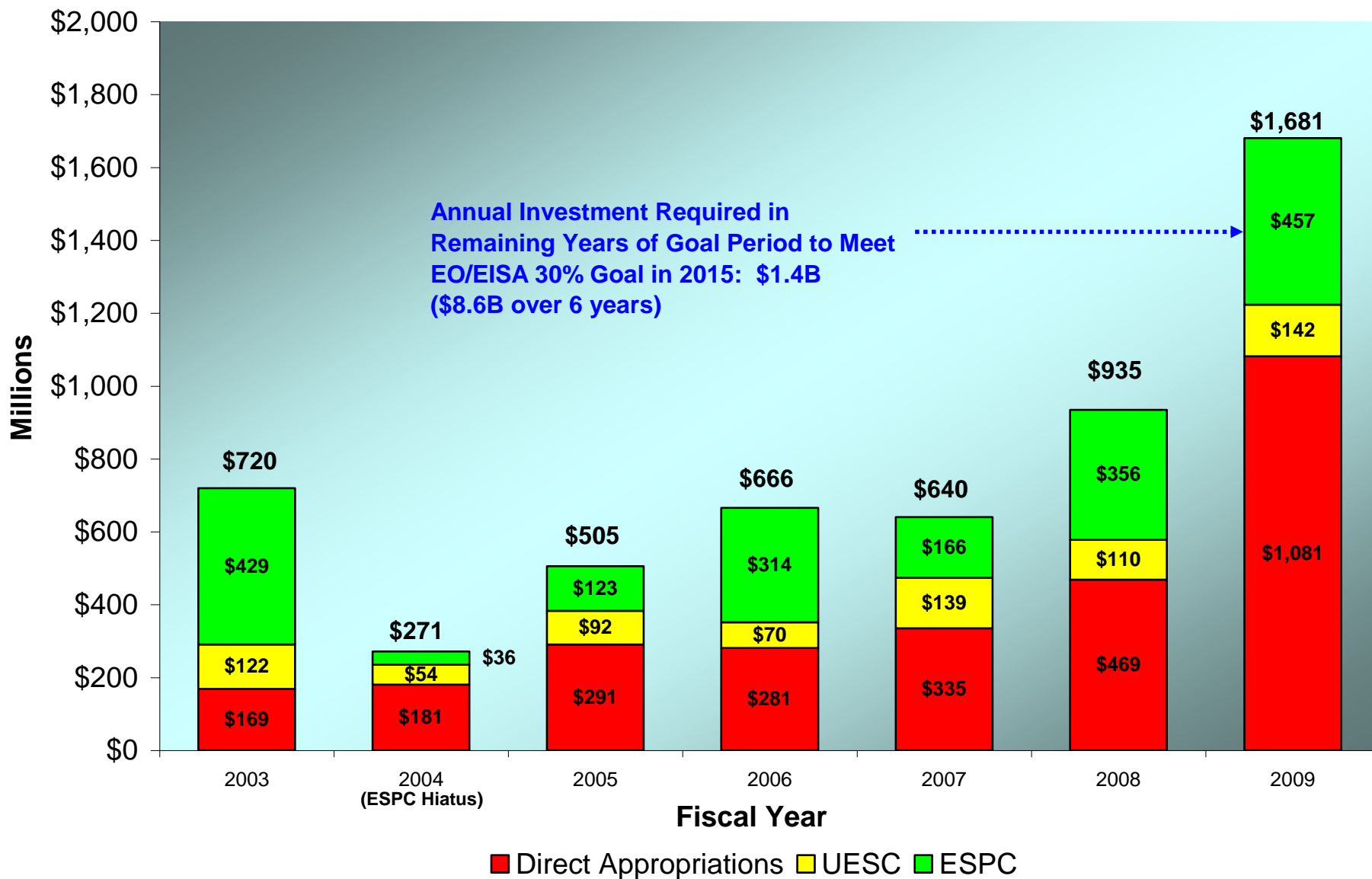


- FEMP Renewable Guidance:

[http://www1.eere.energy.gov/femp/pdfs/epact05\\_fedrenewenergyguid.pdf](http://www1.eere.energy.gov/femp/pdfs/epact05_fedrenewenergyguid.pdf)

- Section 4 describes when RE can be used for EE goals and the phase out of using REC purchases to meet EE goals
- **“Used”** - Renewable energy certificates (RECs) must be retained for project to count towards RE goal
- If RECs are sold, then replacement RECs may be purchased
  - “REC swap” allowed at agency level
  - Calculated automatically by FEMP if an agency reports enough RECs to “swap” for RE projects that did not retain RECs

# Federal Facilities: Investment in Energy Efficiency Projects



PRELIMINARY DATA

- Energy Savings Performance Contract (ESPC)
- Utility Energy Service Contract (UESC)
- Rebates & Incentives
- Power Purchase Agreement (PPA)
- Enhanced Use Lease (EUL)
- Appropriated Dollars (can be used in conjunction with ESPCs)

- Authorities:
  - National Energy Conservation Policy Act (42 USC 8287), Title VIII Shared Energy Savings (1986)
  - Energy Policy Act (EPACT), Public Law 102-486 (1992)
  - DoD Authorization Act FY05, Public Law 108-375 (2004)
  - Energy Policy Act of 2005
  - Energy Independence and Security Act of 2007 (H.R. 6 ENR) – permanent reauthorization (Sec. 514)
- Precedents:
  - 1st federal projects in mid-'90s
  - 262 projects awarded & \$2.3 Billion in investment value

- Who can use it
  - All Federal Agencies
- How it Works
  - Contract between federal agency & energy service company (ESCO)
  - ESCO finances a project guarantying a specified level of cost savings
  - FEMP can assist with screening ESPC projects for renewable energy opportunities
  - Typically bundle RE with EE, although stand-alone RE projects do occur
  - Agency pays ESCO over the term of the contract at a rate which cannot exceed the related savings

- Contact an FFS
  - Preliminary Assessment (PA)
    - ESCO Selection
      - Investment Grade Audit (IGA)
        - Final Proposal (FP)
          - Task order Award (TO)
            - Construction & Acceptance
              - Performance Period

## Pros

- Well established project implementation process
- 25 year contract length - fits well with higher renewable energy paybacks
- O&M can be included as part of contract
- Excess electricity/thermal energy sale allowed (EISA provision)
- ESPCs can incorporate tax incentives
  - ESCO/financier must own equipment for tax incentive eligibility

## Cons

- Complex contracting vehicle, with lengthy development timeline
- Lack of familiarity with ESPC contract among Contracting Officers
- Long term contract requires life of contract focus

## USCG Baltimore, Maryland Landfill Gas



- Boiler Conversion to landfill gas Cogeneration Plant
  - 4 MW Electricity
  - 8,000 lb/hr Steam
- 15 year contract length
- Project Investment : \$15.0 million
- Annual Savings: \$2.5 million
- Offsets 18,000,000 kWh/yr and 71,000 decatherms/yr of Natural Gas
- Operational: April 2009



## National Renewable Energy Laboratory 29 BBtu Biomass Thermal Plant

- Financed, owned, and maintained by Ameresco
- NREL is repaying Ameresco with proceeds from natural gas utility cost savings
- Fuel: Wood waste and forest thinnings from Colorado's Front Range
- 41 BBtu total natural gas savings
- GHG Emissions Reduction: 4.8 million pounds of CO<sub>2</sub>/year
- Operational: November 2008



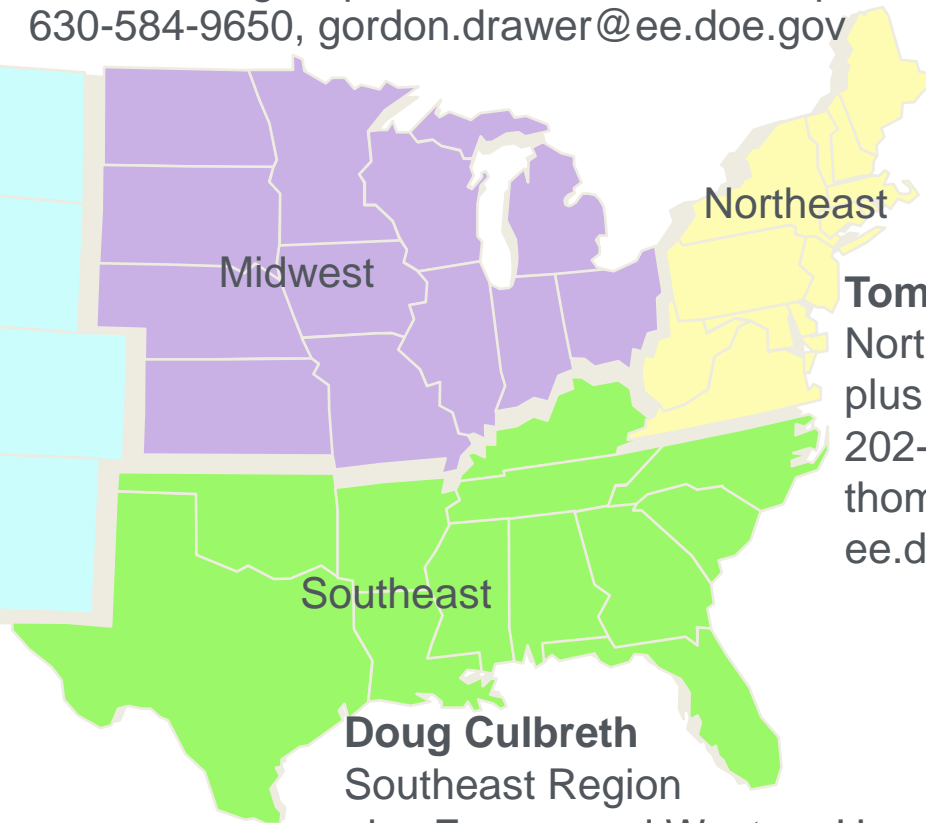
# FEMP Federal Financing Specialists (FFS's) (and ESPC contacts)

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